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RAW SEQUENCE LISTING

DATE: 02/11/2002

PATENT APPLICATION: US/09/921,159

TIME: 09:37:16

Input Set : A:\-68-1.app

Output Set: N:\CRF3\02112002\I921159.raw

3 <110> APPLICANT: Jegla, Timothy James
 4 Witzel, Julie Dickson
 5 ICAgen, Inc.
 7 <120> TITLE OF INVENTION: Slo2 and Slo4, Novel Potassium Channel Proteins from
 8 Human Brain
 10 <130> FILE REFERENCE: 018512-006810US
 12 <140> CURRENT APPLICATION NUMBER: US 09/921,159
 C--> 13 <141> CURRENT FILING DATE: 2002-01-17
 15 <150> PRIOR APPLICATION NUMBER: US 60/249,112
 16 <151> PRIOR FILING DATE: 2000-11-15
 18 <160> NUMBER OF SEQ ID NOS: 38
 20 <170> SOFTWARE: PatentIn Ver. 2.1
 22 <210> SEQ ID NO: 1
 23 <211> LENGTH: 3708
 24 <212> TYPE: DNA
 25 <213> ORGANISM: Homo sapiens
 27 <220> FEATURE:
 28 <221> NAME/KEY: CDS
 29 <222> LOCATION: (1)..(3708)
 30 <223> OTHER INFORMATION: human Slo2 potassium channel alpha subunit
 32 <400> SEQUENCE: 1
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 34 Met Ala Arg Ala Lys Leu Pro Arg Ser Pro Ser Glu Gly Lys Ala Gly
 35 1 5 10 15
 37 ccg ggg ggc gcc cca gcc ggc gcc gca gcc ccc gag gag cct cac ggg 96
 38 Pro Gly Gly Ala Pro Ala Gly Ala Ala Ala Pro Glu Glu Pro His Gly
 39 20 25 30
 41 ctc agc ccg ctg ctg ccg gcc cgc ggc ggg ggc tcc gtg ggc agc gac 144
 42 Leu Ser Pro Leu Leu Pro Ala Arg Gly Gly Gly Ser Val Gly Ser Asp
 43 35 40 45
 45 gtg ggc cag agg ctt cct gta gaa gat ttc agc ctg gac tcc tcc ctg 192
 46 Val Gly Gln Arg Leu Pro Val Glu Asp Phe Ser Leu Asp Ser Ser Leu
 47 50 55 60
 49 tct cag gtc cag gtg gag ttc tac gtc aac gag aac acc ttc aag gag 240
 50 Ser Gln Val Gln Val Glu Phe Tyr Val Asn Glu Asn Thr Phe Lys Glu
 51 65 70 75 80
 53 cgg ctc aag ctg ttc ttc atc aaa aac caa aga tgc agc ctg agg atc 288
 54 Arg Leu Lys Leu Phe Phe Ile Lys Asn Gln Arg Ser Ser Leu Arg Ile
 55 85 90 95
 57 cgg ctg ttc aac ttc tcc ctg aag ctg ctc acc tgc ctg ctc tac att 336
 58 Arg Leu Phe Asn Phe Ser Leu Lys Leu Leu Thr Cys Leu Leu Tyr Ile
 59 100 105 110
 61 gtg cgc gtc ctg ctc gat gac ccg gcc ctg ggc atc gga tgc tgg ggc 384

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62 Val Arg Val Leu Leu Asp Asp Pro Ala Leu Gly Ile Gly Cys Trp Gly
63      115      120      125
65 tgc cca aag cag aac tac tcc ttc aat gac tcg tcc tcc gag atc aac 432
66 Cys Pro Lys Gln Asn Tyr Ser Phe Asn Asp Ser Ser Ser Glu Ile Asn
67      130      135      140
69 tgg gct cct att ctg tgg gtg gag aga aag atg aca ctg tgg gcg atc 480
70 Trp Ala Pro Ile Leu Trp Val Glu Arg Lys Met Thr Leu Trp Ala Ile
71 145      150      155      160
73 cag gtc atc gtg gcc ata ata agc ttc ctg gag acg atg ctt ctc atc 528
74 Gln Val Ile Val Ala Ile Ile Ser Phe Leu Glu Thr Met Leu Leu Ile
75      165      170      175
77 tac ctc agc tac aaa ggc aac atc tgg gag cag atc ttc cgc gtg tcc 576
78 Tyr Leu Ser Tyr Lys Gly Asn Ile Trp Glu Gln Ile Phe Arg Val Ser
79      180      185      190
81 ttc gtc ctg gag atg atc aac act ctg ccc ttc atc atc acg atc ttc 624
82 Phe Val Leu Glu Met Ile Asn Thr Leu Pro Phe Ile Ile Thr Ile Phe
83      195      200      205
85 tgg ccg ccg ctg cgg aac ctg ttc atc ccc gtc ttt ctg aac tgc tgg 672
86 Trp Pro Pro Leu Arg Asn Leu Phe Ile Pro Val Phe Leu Asn Cys Trp
87      210      215      220
89 ctg gcc aag cac gcg ctg gaa aac atg att aat gac ttc cac cgt gcc 720
90 Leu Ala Lys His Ala Leu Glu Asn Met Ile Asn Asp Phe His Arg Ala
91 225      230      235      240
93 atc ctg cgg aca cag tca gcc atg ttc aac cag gtc ctc atc ctc ttc 768
94 Ile Leu Arg Thr Gln Ser Ala Met Phe Asn Gln Val Leu Ile Leu Phe
95      245      250      255
97 tgc acc ctg ctg tgc ctc gtt ttc acg ggg acc tgc ggc atc cag cac 816
98 Cys Thr Leu Leu Cys Leu Val Phe Thr Gly Thr Cys Gly Ile Gln His
99      260      265      270
101 ctg gag cgg gcg ggc gag aac ctg tcc ctc ctg acc tcc ttc tac ttc 864
102 Leu Glu Arg Ala Gly Glu Asn Leu Ser Leu Leu Thr Ser Phe Tyr Phe
103      275      280      285
105 tgc atc gtc acc ttc tcc acc gtg ggc tac ggt gac gtc acg ccc aag 912
106 Cys Ile Val Thr Phe Ser Thr Val Gly Tyr Gly Asp Val Thr Pro Lys
107      290      295      300
109 atc tgg cca tcg cag ctg ctg gtg gtc atc atg atc tgc gtg gcc ctc 960
110 Ile Trp Pro Ser Gln Leu Leu Val Val Ile Met Ile Cys Val Ala Leu
111 305      310      315      320
113 gtg gtg ctc cca ctg cag ttc gag gag ctc gtc tac ctc tgg atg gag 1008
114 Val Val Leu Pro Leu Gln Phe Glu Glu Leu Val Tyr Leu Trp Met Glu
115      325      330      335
117 cgg cag aag tca ggg ggc aac tac agc cgc cac cgt gcg cag acg gag 1056
118 Arg Gln Lys Ser Gly Gly Asn Tyr Ser Arg His Arg Ala Gln Thr Glu
119      340      345      350
121 aag cac gtg gtc ctg tgt gtc agc tcc ctc aag atc gac ctt ctc atg 1104
122 Lys His Val Val Leu Cys Val Ser Ser Leu Lys Ile Asp Leu Leu Met
123      355      360      365
125 gac ttc ctg aac gag ttc tac gcc cac ccc cgg ctc cag gac tat tac 1152
126 Asp Phe Leu Asn Glu Phe Tyr Ala His Pro Arg Leu Gln Asp Tyr Tyr

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127	370	375	380	
129	gtg gtc atc ctg tgc ccc acg gag atg gat gtc cag gtg cgc aga gtc	1200		
130	Val Val Ile Leu Cys Pro Thr Glu Met Asp Val Gln Val Arg Arg Val			
131	385 390 395 400			
133	ctg cag atc cct ctg tgg tcc cag cgg gtc atc tac ctc cag ggc tct	1248		
134	Leu Gln Ile Pro Leu Trp Ser Gln Arg Val Ile Tyr Leu Gln Gly Ser			
135	405 410 415			
137	gca ctc aaa gac cag gac ctc atg cga gcc aag atg gac aat ggg gag	1296		
138	Ala Leu Lys Asp Gln Asp Leu Met Arg Ala Lys Met Asp Asn Gly Glu			
139	420 425 430			
141	gcc tgc ttc atc ctc agc agc agg aac gag gtg gac cgc acg gct gca	1344		
142	Ala Cys Phe Ile Leu Ser Ser Arg Asn Glu Val Asp Arg Thr Ala Ala			
143	435 440 445			
145	gac cac cag acc atc ctg cgc gcc tgg gcc gtg aag gac ttc gcc ccc	1392		
146	Asp His Gln Thr Ile Leu Arg Ala Trp Ala Val Lys Asp Phe Ala Pro			
147	450 455 460			
149	aac tgc ccc ctc tac gtc cag atc ctc aaa cct gaa aac aag ttt cac	1440		
150	Asn Cys Pro Leu Tyr Val Gln Ile Leu Lys Pro Glu Asn Lys Phe His			
151	465 470 475 480			
153	gtc aag ttt gct gac cac gtg gtg tgt gag gag gag tgc aag tac gcc	1488		
154	Val Lys Phe Ala Asp His Val Val Cys Glu Glu Glu Cys Lys Tyr Ala			
155	485 490 495			
157	atg ctg gcg ctg aac tgc atc tgc ccg acc tcc acc ctc atc acc	1536		
158	Met Leu Ala Leu Asn Cys Ile Cys Pro Ala Thr Ser Thr Leu Ile Thr			
159	500 505 510			
161	ctg ctg gtg cac acg tcc cgc gcc cag gag gga cag gag tct ccg gag	1584		
162	Leu Leu Val His Thr Ser Arg Gly Gln Glu Gly Gln Glu Ser Pro Glu			
163	515 520 525			
165	cag tgg cag cgc atg tat ggg cgc tgc tcc gcc aac gag gtg tac cac	1632		
166	Gln Trp Gln Arg Met Tyr Gly Arg Cys Ser Gly Asn Glu Val Tyr His			
167	530 535 540			
169	atc cgc atg ggt gac agc aag ttc ttc cgc gag tac gag ggc aag agc	1680		
170	Ile Arg Met Gly Asp Ser Lys Phe Phe Arg Glu Tyr Glu Gly Lys Ser			
171	545 550 555 560			
173	ttc acc tac gcg gcc ttc cac gcc cac aag aag tat ggc gtg tgc ctc	1728		
174	Phe Thr Tyr Ala Ala Phe His Ala His Lys Lys Tyr Gly Val Cys Leu			
175	565 570 575			
177	atc ggg ctg aag cgg gag gac aac aag agc atc ctg ctg aac ccg ggg	1776		
178	Ile Gly Leu Lys Arg Glu Asp Asn Lys Ser Ile Leu Leu Asn Pro Gly			
179	580 585 590			
181	ccc cgg cac atc ctg gcc gcc tct gac acc tgc ttc tac atc aac atc	1824		
182	Pro Arg His Ile Leu Ala Ala Ser Asp Thr Cys Phe Tyr Ile Asn Ile			
183	595 600 605			
185	acc aag gag gag aac tcg gcc ttc atc ttc aag cag gag gag aag cgg	1872		
186	Thr Lys Glu Glu Asn Ser Ala Phe Ile Phe Lys Gln Glu Glu Lys Arg			
187	610 615 620			
189	aag aag agg gcc ttc tcg ggg cag ggg ctg cac gag ggt ccg gcc cgc	1920		
190	Lys Lys Arg Ala Phe Ser Gly Gln Gly Leu His Glu Gly Pro Ala Arg			
191	625 630 635 640			

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193 ctg ccc gtg cac agc atc atc gcc tcc atg gtg gcc atg gac ctg cag 1968
194 Leu Pro Val His Ser Ile Ile Ala Ser Met Val Ala Met Asp Leu Gln
195          645          650          655
197 ggc aca gag cac cgg cct acg cag agc ggc ggt ggg ggc ggg ggc agc 2016
198 Gly Thr Glu His Arg Pro Thr Gln Ser Gly Gly Gly Gly Gly Gly Ser
199          660          665          670
201 aag ctg gca ctg ccc acg gag aac ggc tcg ggc agc cgg cgg ccc agc 2064
202 Lys Leu Ala Leu Pro Thr Glu Asn Gly Ser Gly Ser Arg Arg Pro Ser
203          675          680          685
205 atc gcg ccc gtc ctg gaa ctg gcc gac agc tca gcc ctg ctg ccc tgc 2112
206 Ile Ala Pro Val Leu Glu Leu Ala Asp Ser Ser Ala Leu Leu Pro Cys
207          690          695          700
209 gac ctg ctg agc gac cag tcg gag gat gag gtg acg ccg tcg gac gac 2160
210 Asp Leu Leu Ser Asp Gln Ser Glu Asp Glu Val Thr Pro Ser Asp Asp
211 705          710          715          720
213 gag ggg ctc tcc gtg gta gag tat gtg aag ggc tac cct ccc aac tcg 2208
214 Glu Gly Leu Ser Val Val Glu Tyr Val Lys Gly Tyr Pro Pro Asn Ser
215          725          730          735
217 ccc tac atc gtc agc tcc cca acc ctg tgc cac ctc ctg cct gtg aaa 2256
218 Pro Tyr Ile Val Ser Ser Pro Thr Leu Cys His Leu Leu Pro Val Lys
219          740          745          750
221 gcc ccc ttc tgc tgc ctg cgg ctg gac aag ggc tgc aag cac aac agc 2304
222 Ala Pro Phe Cys Cys Leu Arg Leu Asp Lys Gly Cys Lys His Asn Ser
223          755          760          765
225 tat gaa gac gcc aag gcc tac ggg ttc aag aac aag ctg atc atc gtc 2352
226 Tyr Glu Asp Ala Lys Ala Tyr Gly Phe Lys Asn Lys Leu Ile Ile Val
227          770          775          780
229 tcg gca gag acg gcc ggc aat ggg ctg tac aac ttc atc gtg cca ctg 2400
230 Ser Ala Glu Thr Ala Gly Asn Gly Leu Tyr Asn Phe Ile Val Pro Leu
231 785          790          795          800
233 cgg gcc tac tac aga tcc cgc aag gag ctg aac ccc atc gtg ctg ctg 2448
234 Arg Ala Tyr Tyr Arg Ser Arg Lys Glu Leu Asn Pro Ile Val Leu Leu
235          805          810          815
237 ctg gac aac aag ccc gac cac cac ttc ctg gaa gcc atc tgc tgc ttc 2496
238 Leu Asp Asn Lys Pro Asp His His Phe Leu Glu Ala Ile Cys Cys Phe
239          820          825          830
241 ccc atg gtc tac tac atg gag ggc tct gtg gac aac ctg gac agc ctg 2544
242 Pro Met Val Tyr Tyr Met Glu Gly Ser Val Asp Asn Leu Asp Ser Leu
243          835          840          845
245 ctg cag tgt ggc atc atc tat gcg gac aac ctg gtg gtg gtg gac aag 2592
246 Leu Gln Cys Gly Ile Ile Tyr Ala Asp Asn Leu Val Val Val Asp Lys
247          850          855          860
249 gag agc acc atg agc gcc gag gag gac tac atg gcg gac gcc aag acc 2640
250 Glu Ser Thr Met Ser Ala Glu Glu Asp Tyr Met Ala Asp Ala Lys Thr
251 865          870          875          880
253 atc gtc aac gtg cag acc atg ttc cgg ctc ttc ccc agc ctc agc atc 2688
254 Ile Val Asn Val Gln Thr Met Phe Arg Leu Phe Pro Ser Leu Ser Ile
255          885          890          895
257 acc acg gag ctc acc cac cct tcc aac atg cgc ttc atg cag ttc cgc 2736

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258 Thr Thr Glu Leu Thr His Pro Ser Asn Met Arg Phe Met Gln Phe Arg
259          900          905          910
261 gcc aag gac agc tac tct ctg gct ctt tcc aaa cta gaa aag agg gag 2784
262 Ala Lys Asp Ser Tyr Ser Leu Ala Leu Ser Lys Leu Glu Lys Arg Glu
263          915          920          925
265 cga gag aat ggc tcc aac ctg gcc ttc atg ttc cgc ctg ccg ttc gcc 2832
266 Arg Glu Asn Gly Ser Asn Leu Ala Phe Met Phe Arg Leu Pro Phe Ala
267          930          935          940
269 gcc ggc cgc gtc ttc agc atc agc atg ttg gac aca ctg ctc tac cag 2880
270 Ala Gly Arg Val Phe Ser Ile Ser Met Leu Asp Thr Leu Leu Tyr Gln
271 945          950          955          960
273 tcc ttc gtg aag gac tac atg atc acc atc acc cgg ctg ctg ctg ggc 2928
274 Ser Phe Val Lys Asp Tyr Met Ile Thr Ile Thr Arg Leu Leu Leu Gly
275          965          970          975
277 ctg gac acc acg ccg ggc tcg ggg tac ctc tgt gcc atg aaa atc acc 2976
278 Leu Asp Thr Thr Pro Gly Ser Gly Tyr Leu Cys Ala Met Lys Ile Thr
279          980          985          990
281 gag ggc gac ctg tgg atc cgc acg tac ggc cgc ctc ttc cag aag ctc 3024
282 Glu Gly Asp Leu Trp Ile Arg Thr Tyr Gly Arg Leu Phe Gln Lys Leu
283          995          1000          1005
285 tgc tcc tcc agc gcc gag atc ccc att ggc atc tac cgg aca gag agc 3072
286 Cys Ser Ser Ser Ala Glu Ile Pro Ile Gly Ile Tyr Arg Thr Glu Ser
287 1010          1015          1020
289 cac gtc ttc tcc acc tcg gag ccc cac gac ctc aga gcc cag tcc cag 3120
290 His Val Phe Ser Thr Ser Glu Pro His Asp Leu Arg Ala Gln Ser Gln
291 1025          1030          1035          1040
293 atc tcg gtg aac gtg gag gac tgt gag gac aca cgg gaa gtg aag ggg 3168
294 Ile Ser Val Asn Val Glu Asp Cys Glu Asp Thr Arg Glu Val Lys Gly
295          1045          1050          1055
297 ccc tgg ggc tcc cgc gct ggc acc gga ggc agc tcc cag ggc cgc cac 3216
298 Pro Trp Gly Ser Arg Ala Gly Thr Gly Gly Ser Ser Gln Gly Arg His
299          1060          1065          1070
301 acg ggc ggc ggt gac ccc gca gag cac cca ctg cta cgg cgc aag agc 3264
302 Thr Gly Gly Gly Asp Pro Ala Glu His Pro Leu Leu Arg Arg Lys Ser
303          1075          1080          1085
305 ctg cag tgg gcc cgg agg ctg agc cgc aag gcg ccc aag cag gca ggc 3312
306 Leu Gln Trp Ala Arg Arg Leu Ser Arg Lys Ala Pro Lys Gln Ala Gly
307 1090          1095          1100
309 cgg gcg gcg gcc gcg gag tgg atc agc cag cag cgc ctc agc ctg tac 3360
310 Arg Ala Ala Ala Glu Trp Ile Ser Gln Gln Arg Leu Ser Leu Tyr
311 1105          1110          1115          1120
313 cgg cgc tct gag cgc cag gag ctc tcc gag ctg gtg aag aac cgc atg 3408
314 Arg Arg Ser Glu Arg Gln Glu Leu Ser Glu Leu Val Lys Asn Arg Met
315          1125          1130          1135
317 aag cac ctg ggg ctg ccc acc acc ggc tac gag gac gta gca aat tta 3456
318 Lys His Leu Gly Leu Pro Thr Thr Gly Tyr Glu Asp Val Ala Asn Leu
319          1140          1145          1150
321 aca gcc agt gat gtc atg aat cgg gta aac ctg gga tat ttg caa gac 3504
322 Thr Ala Ser Asp Val Met Asn Arg Val Asn Leu Gly Tyr Leu Gln Asp

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L:13 M:271 C: Current Filing Date differs, Replaced Current Filing Date